

CLAIMS

We claim:

- 5 1. A method for encoding input data comprising the steps of:  
generating transformed signals in response to the input data,  
wherein the transformed signals are generated using a reversible wavelet  
transform; and  
compressing the transformed signals into data representing a  
10 losslessly compressed version of the input data.
2. The method defined in Claim 1 wherein the transformed  
signals comprises a plurality of coefficients.
- 15 3. The method defined in Claim 1 wherein the step of  
generating comprises decomposing the input data using at least one non-  
minimal length reversible filter to produce a series of coefficients.
- 20 4. The method defined in Claim 3 wherein said at least one  
non-minimal length reversible filter comprises a plurality of one-  
dimensional filters.
5. The method defined in Claim 1 wherein the input data  
comprises image data.

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7. The method defined in Claim 1 further comprising the steps

decompressing the losslessly compressed version of the input data into transformed signals; and

10 generating the input data from the transformed signals into a reconstructed version of the input data using an inverse reversible wavelet transform.

8. A method for decoding data into original data comprising the  
15 steps of:

decompressing a losslessly compressed version of input data into a plurality of transformed signals; and

generating a reconstructed version of original data from the plurality of transformed signals using an inverse reversible wavelet transform.

9. The method defined in Claim 8 wherein the transformed signals comprises a plurality of coefficients.

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10. The method defined in Claim 8 wherein the step of generating comprises decomposing the input data using at least one non-minimal length reversible filter to produce a series of coefficients.

11. The method defined in Claim 10 wherein said at least one non-minimal length reversible filter comprises a plurality of one-dimensional filters.

12. A method for encoding input data comprising the steps of:  
generating a first plurality of transformed signals in response to the  
input data, wherein the transformed signals are generated using a  
reversible wavelet transform;

compressing the first plurality of transformed signals into data representing a losslessly compressed version of the input data;

decompressing the losslessly compressed version of the input data into a second plurality of transformed signals; and

generating the input data from the second plurality of transformed signals into a reconstructed version of the input data using an inverse reversible wavelet transform.

13. A method for encoding input data comprising the steps of:  
transform coding the input data into a series of coefficients; and  
embedded coding the series of coefficients, including the steps of  
ordering the series of coefficients and performing bit significance

25 embedding on the series of coefficients, wherein a first type of embedded

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[illegible]

14. The method defined in Claim 13 wherein the step of  
5 transform coding comprises wavelet filtering the input data.

15. The method defined in Claim 13 wherein the first type of embedded coding comprises tree coding.

10 *new Fe* 16. The method defined in Claim 13 wherein the step of embedded coding comprises formatting the series of coefficients into sign-magnitude format.

17. A method for encoding input data comprising the steps of:  
transforming input data into a series of coefficients using reversible wavelets;  
converting the series of coefficients into sign-magnitude format into a series of formatted coefficients;  
coding a first portion of the series of formatted coefficients using a first type of embedded coding to produce a first bit stream; and  
coding a second portion of the series of formatted coefficients using a second type of embedded coding to produce a second bit stream, wherein the first bit stream and second bit stream are combined into a single bit stream.

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**BIBLIOGRAPHY**